

The Role of Motivation Among IT professionals To Foster Innovation: SMEs Focus

Svetlana Gribanova, Ketevan Rizhamadze, Anna Ābeltiņa

Abstract — In today's fast-paced digital world outperforming competitors and achieving success becomes utterly challenging for Small and Medium-sized Enterprises (SMEs). The rapid speed of technological change can threaten established industries and undermine existing businesses. By effectively harnessing innovation, businesses can open-up new markets and develop new ways to accommodate the needs of existing customers. Countless research findings reveal that innovation is one of the most essential factors to ensure strategic efficiency and effectiveness in SMEs. Human resources play an integral part in attaining company's goals and objectives. By motivating and encouraging employees to be more innovative, companies can quickly reap the benefits of competitive marketplace. In addition, employees can become a great source of creative and innovative ideas for future endeavors. In this rapidly changing environment, managers should reveal high levels of creativity in offering a plethora of motivational incentives to employees. Increasing employee enthusiasm, motivation and personal commitment remain one of the most enduring and challenging tasks that managers must tackle. Present paper addresses the issue of motivation among Information Technologies (further in the text IT) professionals in fostering innovation. The aim of the paper is to determine the role and significance of motivation in encouraging innovative and creative activities among IT professionals working in the small and medium sized enterprises. The objective of the research is to find the linkage between IT employee's motivation and their contribution to innovation.

Index Terms — Human resources, Innovation, IT, Motivation, SMEs.

I. INTRODUCTION

The topics that encompasses innovation and employee motivation tend to be extremely popular and highly researched areas for practitioners and researchers. In the paper, the authors scrutinize the role of motivation in fostering innovation activities in small and medium-sized enterprises (further in the text SMEs). SMEs constitute the largest business block and provide the bulk of employment [35]. In general, SMEs include firms that are able to create jobs with low capital costs, function as a subcontractor for large organizations, familiarize quickly to the demands and fluctuations of the market place and to fill negligible areas of the market, which are not targeted by large corporations [3]. Innovation is often regarded as a backbone and driving force of economic growth alongside with SMEs. European commission defines innovation as the most important means of overcoming the major societal challenges: climate

change, scarcity of natural resources and aging society [15]. Organizations alter their internal and external activities pursuant to market needs. In this process of change, the attitude revealed by managers is tremendously crucial. Managers' favorable and positive approach toward change creates internal climate in the organization that encourages the development of innovative and creative ideas. This aspect becomes imperative in the implementation stage, where managers provide support for coordination and manage conflicts [9]. Consequently, the success of innovation is rooted and is highly dependent on right management of human resources [25].

II. METHODOLOGY

The purpose of this paper is to illustrate and investigate the significance of motivation among IT professionals working in the small and medium sized enterprises with regards to innovation development. In addition, the main objective of proposed research is to examine how IT specialists are managed within the organization and what is the role of motivation during the operations. This paper aims to analyze and review issues that arise in the management of culturally diverse and geographically dispersed teams. Real world examples will be assessed from theoretical frameworks adjoining cross cultural management and how leaders can tackle the challenges and establish successful team dynamics will be explored. Genuine solutions to the most substantial issues will be proposed taking into consideration best practices and theoretical frameworks.

The primary objectives of the article are:

- To investigate the role of innovation and its significance from theoretical perspective;
- To explore the challenges that managers face in motivating today's workforce;
- To analyze the peculiarities of motivation among IT professionals;
- To propose solutions to the problem of engaging, involving and encouraging staff to participate in the decision-making process;
- To discover ways of motivating IT professionals to innovate.

The method used in the research is qualitative review of bibliographical sources on motivation and innovative activity aspects in order to summaries the information to be used in further empirical research.

III. THEORETICAL FRAMEWORK

Initially, Schumpeter [31]. introduced the notion of innovation. He addressed following five areas to define innovation as illustrated in Fig. 1:

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Fig. 1. Five areas of innovation.

Source: Schumpeter (1934), *The Theory of Economic Development*, Harvard University Press, Cambridge

The field of innovation is quite wide-ranging, and it can imply introduction of radically new products or making minor modification to existing one. In this rapidly changing markets, competitive advantage can come both, from size and from resources. It is evident that organizations, that mobilize knowledge, technological skills and can offer novel products and services to customers are gaining the competitive edge. As a result, organizations in the quest for success are looking for better ways to become innovative, creative and to perform better compared to its competitors. It is imperative for managers to utilize efficiently and effectively scarce human and financial resources. Innovation for a company is a process that includes opportunities, human creativity and ambiguity [38]. Apart from resource-based innovation, knowledge-based innovation is highly reliant on market conditions. From this perspective, to reap the benefits of innovation it must be simple and focused. Managers should assess what they are doing and how they are operating [11]. The right attitude, braced by knowledge and vision, the determination and support of management in effecting change tend to be indispensable [20].

Through various researches, it is well-documented fact that innovation drives economic expansion and greater contributors to it are small firms. The flexibility to adapt and improve products or services are considered as advantageous aspects for small firms. Nevertheless, company's small size is also associated with some drawbacks such as restricted opportunities, unsophisticated intelligence and reactive attitudes toward innovation [16]. SMEs are a fundamental part of the economic fabric and are the backbone of Europe's economy as they play a crucial role in furthering growth, innovation and prosperity. They represent 99% of all businesses in the EU, creating around 85% of new jobs and providing two-thirds of the total private sector employment in the EU. In order to achieve its full potential, Europe's economy highly relies on SMEs: 98 out of every 100 businesses are SMEs and they employ much of the workforce [14].

It is widely recognized and backed by empirical evidence that motivated workforce implies superior corporate

performance. They reveal better results and there are numerous tactics how to motivate people [10]. Managers must bear this in mind and attempt to boost motivation by utilizing various incentive methods. In addition, managers should comprehend that personnel do their best work when they feel supported and trust their organizations. For achieving this, leadership must acknowledge the significance of the employee voice and take it into account when determining how the organization function. In the definition of motivation, four workplace indicators are included:

- Commitment;
- Engagement;
- Satisfaction;
- Intention to quit.

Commitment is employee's engagement in corporate culture. Engagement is drive, determination and inventiveness brought by individuals to their jobs. Whereas satisfaction is how well the company meets their anticipations [28].

IV. CHALLENGES FOR MOTIVATION IN CONTEMPORARY ENVIRONMENT

As a dynamic phenomenon, motivation experiences new challenges in the era of the fast diffusion of new technologies. Nowadays, when inter-personal communication is replaced by online networks, supervisors may chase and control the results and give an immediate feedback. However, they are not able to analyze the process of the work and follow-up on how the worker feels during the work.

Era of new technologies makes information available and accessible. Know-how that used to be a secret before, became a source of attracting new employees through demonstrating the advantages of working for some company. Employees have an opportunity to check the motivation package offered by various employers and to create their own requirements for the future job proposals. They have an opportunity to research and review work environment prevalent at world's leading companies, such as Google, Apple and Amazon and the environment that they create to their workers, their financial and non-financial motivators and to compare it to their current motivation package offered at by their employers. It is important to understand that giant corporations have huge material resources to create special working atmosphere and motivation packages, especially for IT professionals. For some SMEs employees, it decreases the loyalty to their companies as they might start looking for a job in bigger enterprises.

Ability to send and receive information decreases the necessity for employees to work from the office. In 2017, global market size of outsourced services reached 88.9 billion US dollars [32]. In 2018, 70% of professionals around the globe worked remotely at least once a week and 53% at least half of the week [4]. The diffusion of telecommuting meets the demand of employees that in various surveys state that they are highly motivated by flexibility and ability to work outside the office [8], [18],

[23]. With this regard, the opportunity of working remotely with flexible schedule becomes a significant benefit for IT professionals. However, for the manager the process of control and motivation for innovative activities become a very challenging task including the need of finding the best communication options, controlling tools and ways of rewarding.

New technology helps to track the activity of employees constantly. On the one hand, workers feel the pressure of permanent control as supervisors and co-workers may have access to his/her working documents and programs and monitor the progress. This aggravates stress and decreases the intrinsic motivation of workers. On another hand, tracking the activity helps to receive immediate feedback. According to various researches, receiving a feedback is a strong motivating factor for the employees in the 21st century [2], [17], [36].

Above and beyond the indirect influence of new technologies on employee's motivation, the development of information and communications technology (ICT) generates products to stimulate and monitor motivation within the organization. Some companies, such as T-Mobile, imply gamification to motivate their employees and share the ideas. As the result participation of employees increased on 96% and contribution of workers spiked to 583% that led to customer satisfaction increase by 31% [24]. With the lightning speed of technological evolution, with each novel upgrade technology compounds existing technologies to create something better than what was previously used before and creates several programs and software's to facilitate employee's engagement in the organizational development process. Companies gladly install innovative software's and systems for better motivating and engaging employees into the operations. The most popular employee engagement platforms that allows everyone in an organization to drive the change and achieve their true potential at work tend to be: Peakon, Emplify, Hyphen, Seakap, Employee Pulse and Kudos.

V. PECULIARITIES OF MOTIVATION OF IT PROFESSIONALS

The role of IT professionals in providing crucial link between technological progress and economic growth, social development and environmental well-being is stated in "Canberra Manual", published by the OECD and Eurostat in 1995 [29].

In the beginning of 21st Century it was evident that IT and computer technology highly influenced the economy and most economists forecasted that the demand for IT skills would rise further in the future [19].

There have been few researches studying the peculiarities of motivating IT professionals. Couger and Zawacki found that IT professionals have higher demand for growth than professionals from other industries, but their need in social interaction is much lower [7]. More recent research conducted by Burn, Couger and Ma showed that the factors motivating IT professionals can be presented in the descending order: promotion prospects, job satisfaction, compensation package, training/career development, good management, working conditions, job security [5]. The same paper divided the factors influencing motivation of IT

professionals into hygiene factors and motivators proving that more appreciable for IT professionals are motivators [5]. The results proved Herzberg's theory and showed that IT professionals are aimed to grow.

The research conducted by Kowal & Roztocki showed the peculiarities in job satisfaction of IT professionals in Poland. The study of distinction between satisfaction of IT professionals in developed and transitional economies showed that IT professionals in transitional economies, such as Poland, feel that the compensation level of their companies is not adequate to the competencies they possess [22].

The findings of Wynekoop & Walz and Ertürk & Vurgun researches contradict each other. Wynekoop & Walz found that IT professionals have lower demand for social interaction while their need in self-development and education is high [39]. Ertürk & Vurgun research proved that IT professionals are motivated by positive social environment within the company [13].

It is complicated to find a universal approach to motivating creative IT professionals because of Differentiation of Inputs problem [30]. Talent and originality of ideas can hardly be measured for the most creative IT professionals. And the unified system of motivation can't be provided. Another problem is disability to measure output in every time frame. Working on a big project that is not finished yet IT professionals can't provide specific results of their job and instruments of motivation can hardly be chosen for them.

IT professionals have different needs than workers of other industries. The research of Kupriyanov showed that such factors as interesting job, self-realization, independence, working conditions are more important to IT professionals than to workers of other industries. Their need in financial rewards, power, career building is less expressed [41].

The spread of the research results concerning IT professional's motivation proves that just profession is not satisfactory parameter to determine employee's motivation. Other factors, such as location and generation should also be considered.

VI. CHALLENGES AND PROBLEMS IN MANAGING INNOVATIVE ACTIVITY

The importance of SMEs is highly recognized worldwide. Nonetheless, managers of small and medium enterprises must tackle numerous challenges to attain sustainability in national and international markets. Small and medium firms face several challenges: attaining higher quality standards, tighter cost control and faster response times from suppliers. Consequently, for SMEs it is utterly essential to accelerate process and product innovation. Currently, the World Bank and governments around the world have a very limited range of policy instruments that are established to assist SMEs growth and entrepreneurship [33].

Today, it becomes tougher to small companies to face harsh market conditions, especially in the times of economic crisis which weakens their financial health. Most effected industries are usually industries in which foreign, low-cost producers have entered the market and are threatening the

survival of the existing competitors. In addition, government regulations can change a profitable SME niche business into a nightmare swiftly. Besides, SMEs face increasing digitalization, rising energy and commodity prices and an ageing population. Only through new breakthroughs and insights will these organizations be able to function resourcefully and tackle challenges thus enhancing their competitiveness. High-tech start-ups are equipped with cutting-edge technology but when it comes to turning technology into a successful and profitable business, it becomes horrendous as they lack manufacturing capabilities or distribution channels. Alteration in market conditions forces smaller firms to adapt or change their business model through differentiating their products utilizing new technologies. Most of the time, such alteration are not feasible as small firms lack the required internal financial resources and technical capabilities to adapt to new conditions. Therefore, if adaptation is necessary, they must cooperate with external partners to innovate successfully, to develop new sources of income, and to reach more lucrative situations in the competitive setting. Despite the benefits and advantages of innovation, various organizations are hesitant to practice innovation and avoid it. Major obstacles in managing innovative activities are insufficient knowledge and scarcity of managerial skills. As well as uncertainty associated with innovation process and the discrepancies it may provoke. Still, like other skills, firm managers can learn the process of innovation and master it [20]. Lack of technologies and finances create inconveniency to SMEs. Obsolete technologies and low capital deteriorate the development of innovation capabilities [40].

Frequently, managers are making incorrect decisions because of inadequate understanding of the problem and improper problem identification. There is a greater likelihood that, managers who have insufficient information fail to draw logical inferences based on sound assumptions and thus make erroneous conclusions [20]. The method of information obtaining, and the types of information attained, vastly depends on individual motivations, insights, likes and detestations. Motivation serves to focus attention and to direct energy and to encourage the concentration of resources. Consequently, the duty of senior management is to communicate with its employees about the necessity of innovative efforts and to set clear guidance [34]. Motivation is a vital element for establishing comfortable working space and it could have a positive effect on the development of innovation [21]. However, it is important for managers to utilize several motivational factors other than financial. A global survey revealed that employees are extremely excited and highly engaged when they commence their new jobs. However, motivation drops abruptly after some period. This is consistent with studies indicating that managers play an essential role in determining employee engagement, and disengagement [6]. In the rapidly changing environment, as firms develop, new perspectives are desirable to explicate management practices. A relationship that accentuates equality, shared responsibility and co-operation and the concept of internal networking could be a central direction of management [37].

Availability of an adequately skilled workforce, right skills and access to finance are important factors that affect

firm's capacity to innovate. Internal factors that influence firm's ability to invent are characteristics of the firm (size or age) or choices made by the firm's managers. Other factors are external and form the overall business setting in which firm's function. Small firms may tend to innovate less, but start-ups are still very important innovators. In addition, some firms are most likely to come up with innovations that are fresh to the international market [12].

The EU offers a series of initiatives and actions aimed at providing financial support to SMEs and intends to encourage innovation that gives an opportunity to small firms to introduce innovative and creative ideas to market [15]. SMEs play an essential role in the global economy and it forms a pivotal part of all national economies. Somehow, the significance of SMEs could grow as they are more and more supported by the national governments and the EU. Successful innovation is positively correlated to business growth and consequently this calls for companies to offer proper motivation incentives for their employees [21].

VII. WAYS TO MOTIVATE IT EMPLOYEES TO INNOVATE

As it was discussed above, stimuluses that influence IT professionals differ from those affecting other professionals. Therefore, an approach to their motivation should be different. According to the results of the research of Koudelkova & Milichovsky, 58.3% of employees are very positive about the statement that, employee motivation leads to the creation of successful innovation and other 31% say that this correlation is likely positive [21].

Being more motivated by non-financial rewards, IT professionals may increase their innovative activity if they are motivated by the system of stimuluses. It has been proven by Deloitte Germany innovation contest results. 51% of competing in the contest, employees mentioned that their major stimulus for participation was opportunity to publish an existing idea, 29% mentioned intellectual challenge while only 20% were motivated by the ability to win the prize that was only fifth line in the list of motives. General Electric also relies on innovation contests when it seeks solutions to challenging problems. Employees submit hundreds of solutions many of which can be used for other problems of the company [1].

One of the problems that prevent IT professionals from innovative activity is lack of time. Daily routine binds creativity of IT professionals and in order to overcome the routine, time gap for innovation and creativity should be found. This practice takes place in leading IT companies. For example, Google implemented 20% Time expected requirement. Google employees should devote 20% of their work time to innovative activities on their daily bases [26].

In order to increase innovative activity companies should secure recognition to the inventor. At Intuit, innovations are recognized with a Scott Cook Innovation Award that includes celebration with a statue, name on the Innovation Wall of Fame, dinner with the executive team, and a travel award [1].

Nowadays, innovations are rarely committed by individual inventors. The level of technological development requires teams of IT professionals and engineers to create new product. The problem of finding the

way to collaborate effectively arises. Some companies solve this problem by building open offices that are useful for increasing creativity through communication and exchange of ideas. However open offices are often disliked by employees because of the lack of privacy they experience. Moreover, open offices leave less ability to employees to concentrate on complicated tasks without being disturbed. Instead of open offices many leading IT companies including Pixar and Google create collaborative office space where employees can develop innovative activity.

VIII. CONCLUSION

The topic of innovation and intellectual capital management is highly scrutinized and has received much attention from researchers in previous years. However, majority of those researches encompassed large enterprises with much accessible financial wealth and innovation management tools. Most of SMEs face the challenge of choosing and thus implementing appropriate frameworks including strategies, tools, and methods, which fit their objectives and needs [27].

In today's ever-changing world, innovation management is becoming one of the key drivers for change and competitive advantage within industry. SMEs need to respond rapidly to these emerging changes to fulfill their customer needs more rapidly. SMEs can also make substantial improvement by managing the knowledge assets of their organization. This can only be done by putting more effective structures and systems in place to capture the knowledge of the organization rather than adopting the current ad-hoc approach to technology and information transfer. The lack of innovation strategy, well defined and structured innovation process, and performance indicators are very rarely assessed due to lack of structures and systems in place and poor goal definition. Generally, human resources, one of the greatest assets of an SME are not properly managed and utilized in order to execute innovation project plans.

Recent research on the role of motivation among IT professions in fostering innovation within SMEs has provided a more complete understanding of motivation and its significance in contemporary organizations. Current findings suggest that the motivation plays a critical role in assisting IT professionals to introduce innovative and creative ideas. Key findings that emerged from research are exemplified below:

- The role of innovation in contemporary organizations tend to be substantial, as innovation gives organizations a possibility to achieve competitive advantage on the market, to optimize the costs and to create new products or services;
- One of the most challenging factors in motivating employees is digitalization of communication. Opportunities of working remotely, flexible schedule, virtual communication platforms can either become a convenient way of communication, or a tool of strict and permanent control. This in turn, could limit the creative process within an organization;
- IT professionals differ from other employees as they are in quest to creative and challenging tasks, that allow them to work independently and achieve full personal

potential;

- Two of the biggest challenges facing organizations are: increasing employment engagement and enhancing productivity. Overcoming these challenges call for companies to become more people-forward. People-forward organizations are dedicated to forming discussions with their teams and understanding their needs and wants. Thus, equipping the whole team—notwithstanding their position or role—with meaningful insights and motivation;

- In terms of motivating IT professionals to innovate, it is crucial to understand that recognition and acceptance is extremely important for employees. Similarly, proposing or allocating extra time dedicated to innovative and creative tasks could be a solution.

To sum up, organizations with well-motivated IT professionals can significantly benefit on the market. As evidence suggests, when employees are motivated to work, they will normally to their best in the tasks that are assigned to them. Nevertheless, the role of managers, who comprehend the process, who react to the needs of such employees, who provide guidance and help during planning process, who delegate tasks to others, is still noteworthy. In addition, in order to foster innovation in the organization, it is imperative for managers to motivate IT professionals. For SMEs to achieve desired objectives and showcase best results, an employee should to have a good balance between the aptitude to do the assigned task and inclination to perform the duties. Therefore, it is the role of management to ensure that their employees understand the importance and significance of their individual efforts and contributions in organization's overall goals and direction. In addition, management should acknowledge effort, provide feedback and encourage people to work even harder by offering them opportunities of self-actualization, the praise and incentives.

Moreover, while creating such atmosphere, SMEs have advantage over larger companies, as it tends to be easier for them to organize the process and get faster feedback from the employees.

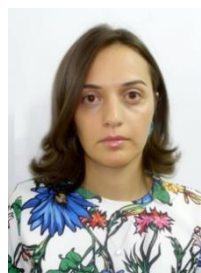
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